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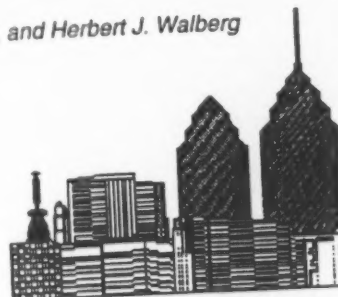
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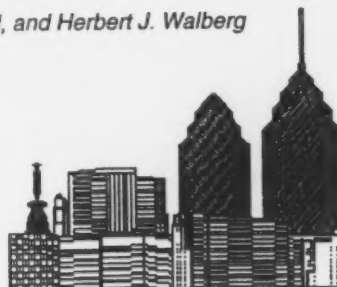
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The National Center on
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Abstract

Psychological theory holds that resilient infants, children, and youth can do well even in adverse circumstances. Corroborative research in preventive psychopathology, longitudinal cases of resilient development, and effective education suggests an ecological framework that organizes findings and can help guide research on educational resilience within the contexts of the home, school, and community. Protective and adverse factors and indicators of each can be identified for each context. The framework integrates literature on educational and psychological conditions and programs that may be altered for increased learning and constructive development. It suggests improved practices and collaborative roles for educators, parents, and psychologists that seem likely to promote educational resilience.

Educational Resilience: An Emergent Construct

As the 1990s unfold, the nation's attention has been captured by the severe problems that plague children, youth, and families in inner cities. Their lives are jeopardized by poverty, lack of employment opportunities, poor health care, and fragmented services. Many inner-city neighborhoods are further plagued by crime, disorder, and despair, which erode students' lives and prospects. In responding to these challenges, researchers are focusing on factors that protect against stress and promote healthy development and learning.

The purpose of this paper is to define the construct of educational resilience, describe its research bases, and draw implications for educational policy. The paper's focus is on potentially malleable conditions within students' homes, peer groups, classrooms, schools, and communities that can be altered to promote educational resilience.

Theoretical and Research Bases

Contributions from three research bases support the emergent construct of educational resilience: (1) theories about resilience from the fields of prevention and developmental psychopathology; (2) empirical results from studies that identify attributes of resilient children and their environments; and (3) findings from educational research on effective learning environments for children at-risk of school failure.

The Resilience Paradigm

Since the 1970s, developmental psychopathology (Cicchetti, 1990) has grown rapidly as a scientific discipline and has provided an integrative framework for understanding maladaptation in children and adolescents, as well as the roles of risk and protective factors. Investigators in clinical psychology, psychiatry, and child development have documented the phenomenon of psychosocial resilience in diverse, at-risk populations (Rolf, Masten, Cicchetti, Nuechterlein, & Weintraub, 1990). Among the populations studied were children born into families with a history of mental illness (Goldstein, 1990), exposed to divorce (Watt, Moorehead-Slaughter, Japzon, & Keller, 1990), exposed to high levels of maternal stress (Pianta, Egeland, & Sroufe, 1990), addicted to drugs (Newcomb & Bentler, 1990), born at medical risk (O'Dougherty & Wright, 1990), exposed to family violence (Straus, 1983), exposed to early parental death (Brown, Harris, & Bifulco, 1986), and reared in poverty (Garmezy, 1991). These studies show that some children survive adversity without lasting damage.

From these studies a developmental model of psychopathology was generated that addressed

vulnerability and resistance to disorders and spanned the years from infancy through adulthood. These studies identified processes that underlie adaptation and promote successful pathways from early childhood to adulthood. Thus, the paradigm of resilience was advanced. Some children thrived in adverse circumstances suggesting that protective mechanisms might be identified and promoted.

Prevention researchers furthered the understanding of resilience by identifying enabling factors that allow individuals to overcome adversities and challenges in development and learning. They conducted studies of individuals believed to be at high risk for developing particular difficulties: children exposed to neonatal stress, poverty, neglect, family violence, war, physical handicaps, and parental mental illness. These prospective studies provided further evidence of the resilience phenomenon. Although a certain percentage of children in high-risk circumstances developed psychopathologies, a larger percentage avoided disorder and became healthy, competent adults (Garmezy, 1991; Rutter, 1966, 1987; Watt, Anthony, Lyman, Wynne, & Rolf, 1984). That only one out of four children born to alcoholic parents will become alcoholic is a case in point (Benard, 1991).

Descriptive Research on Resilience

The first decade of resilience research was characterized by empirical studies that catalogued the attributes, dispositions, and circumstances of children and adults who thrived in adverse conditions. Among the terms used to refer to resilient individuals were "invincible," "hardy," "invulnerable," and "superkids" (Benard, 1991). Based on these studies, a number of characteristics of individuals and environments were found to be related to resilience.

Rutter (1990) identified the active role of the individual as an important resilience factor. Children who are proactive and engage in a variety of activities increase their likelihood of achieving success. Resilient children possess well-developed "self-systems," including a strong locus of control, high self-esteem, high self-efficacy, and autonomy (Garmezy, 1974). In her synthesis of research Benard (1991) concludes that resilient children have strong interpersonal skills, respond well to others, and engage in a high level of activity. They set goals, maintain healthy expectations, and have a clear sense of purpose about their capacity to control their own fate.

The National Education Longitudinal Study (NELS:88) data (U.S. Department of Education, 1988) provide additional support for Garmezy and Benard's characterization of resilient children. Using the database, Peng, Lee, Wang, and Walberg (1992) identified students of low socioeconomic status (SES) from urban communities whose combined reading and mathematics test scores were in the highest quartile on national achievement norms. Resilient students had higher self-concepts and educational aspirations and felt more internally controlled than nonresilient students. They also

interacted more often with their parents and were more often encouraged to do their best.

Some resilient children, however, achieve success by resisting family circumstances. Chess (1989), for example, describes "adaptive distancing" as the process that allows resilient children to stand apart from their disordered families and to set and accomplish constructive goals. Such distancing may be a critical attribute that resilient children possess, allowing them to interact with peers and adults outside the family in constructive ways that contribute to their development and learning.

Resilient children's high expectations, goal direction, and competence in interpersonal and cognitive skills mitigate against risk and stress (Seligman, 1991). Research on problem solving shows that they exhibit the ability to plan, change their environment, and alter their lives in successful ways (Rutter, 1984). Other cognitive skills associated with resilience include above-average intelligence, verbal communication, divergent thinking, humor, and an ability to think reflectively about problems (Hauser, Vieyra, Jacobson, & Wertleib, 1989; Rutter, 1990; Wang, Haertel, & Walberg, 1994).

Rutter (1990) identified some of the behaviors that non-resilient children exhibit--sloppiness, eating and sleeping irregularities, low malleability, and moodiness--which reduce their likelihood of receiving positive attention from adults. By contrast, even temperament, high malleability, predictable behavior, mild-to-moderate emotional reactions, approaching rather than withdrawing from novel situations, and a sense of humor are attributes that protect children and produce affection and support from adults. Overall, social competence, good problem-solving skills, independence, and a clear sense of purpose are the most commonly cited attributes of resilient children (Masten, Morison, Pelligrini, & Tellegen, 1990).

Research on Effective Learning Environments

Studies of curricula, instruction, and school effects provide evidence of practices and policies that contribute to learning and other outcomes among at-risk youth (Purkey & Smith, 1983; Reynolds, 1982; Rutter, 1979a; U.S. Department of Education, 1986; van de Grift, 1990; Wang et al., 1993; Wang & Reynolds, 1995; Williams, Richmond, & Mason, 1986). Those practices and policies include the following: curriculum articulation and organization; maximized learning time; high expectations for student achievement; opportunity to respond; classroom engagement; and student participation in goal setting, learning decisions, and cooperative learning. Proximal psychological variables, such as student cognitive and metacognitive processes, classroom management techniques, teacher-student interactions, and the home environment, demonstrate stronger relationships with school learning than do more distal policy variables.

Few studies provide evidence on school characteristics that foster resilience. Many of the variables used in early studies of urban school effects were demographic and economic indices that were not alterable (Coleman et al., 1966; Jencks et al., 1972). More recently, however, some alterable variables have been identified. In the Louisiana School Effectiveness Study, 16 schools of varying SES levels were studied (Teddle, Kirby, & Stringfield, 1989). Greater achievement than predicted from SES was obtained at schools that devoted a high percentage of time to tasks that made educational sense. The atmosphere in these schools was friendly, but principals and teachers protected the time spent on academic tasks and ensured that students' academic programs were well coordinated. Principals were engaged in school events, led the processes of selection and retention of their faculties, valued high academic achievement, and supported the library activities in the life of the school. Teachers whose students achieved more held high academic expectations of students, engaged in instructional planning, specified clear management and disciplinary rules, taught higher order thinking skills, and employed direct instruction when appropriate.

Effective urban schools emphasize the importance of a sense of student "involvement" and "belonging" that reduces feelings of alienation and disengagement (Bryk & Driscoll, 1988; Lee, Bryk, & Smith, 1993; Raywid, 1995). Attachment to teachers, classmates, the school, and the instructional program apparently shields students against adverse circumstances. Student engagement in school life, moreover, promotes autonomy, positive social interactions, and mastery of tasks. These positive outcomes appear to enhance life satisfaction and general well-being among urban teenagers (Maton, 1990). How schools remain effective is deservedly attracting more attention from educational researchers. Good and Brophy (1986), in their review of the school effectiveness literature, caution researchers that "the study of stability presents major technical and conceptual problems to those who study schools as organizational instructional units" (p. 587). To date the school effectiveness movement has failed to identify the mechanisms that maintain a school's effectiveness from year to year. Furthermore, the mechanisms whereby urban schools remain effective may be different from those that sustain effectiveness in rural or suburban locales. Dworkin (1987) and Murnane (1975) caution that the variables associated with effective schools may differ in urban settings because the student populations are highly mobile. Thus, research on effectiveness requires recognition of the multidimensional nature of school effectiveness and the contextual sensitivity of findings.

Toward a Definition of Educational Resilience

Definitions of resilience developed by the helping professions can inform the application of the resilience phenomenon to education. Some definitions emphasize the capacity of individuals to respond positively to difficult and stressful life events. For example, Rutter (1990) defined *resilience* as the "positive pole of the ubiquitous phenomenon of individual differences in people's response to stress and adversity" (p. 181). Masten, Best, and Garmezy (1991) refer to resilience as the "capacity for or outcome of successful adaptation despite challenging or threatening circumstances" (p. 425). They further note that resilience concerns "behavioral adaptation usually defined as internal states of well-being or effective functioning in the environment or both. Protective factors moderate the effects of individual vulnerability or environmental hazards so that the adaptational trajectory is more positive than would be the case if the protective factor were not operational" (p. 426). Other definitions of resilience focus on the ability of individuals to identify and move toward the positive features of their environment as opposed to the disabling elements (Hogman, 1983). For purposes of this paper, educational resilience is defined as the heightened likelihood of success in school and in other aspects of life, despite environmental adversities, brought about by early traits, conditions, and experiences.

An Ecological Framework to Guide Research on Educational Resilience

Research on educational resilience should focus on the relationships that characterize the development and functioning of resilient individuals and interventions that foster resilience. Bronfenbrenner (1986) recommended that researchers employ ecological models that take into account the overlapping and multiple contexts surrounding individuals in the course of their development. An ecological model to guide research on educational resilience presumes that children's behavior is caused by the interaction of a multitude of environmental, dispositional, and circumstantial influences, and is not the result of a single, precipitating event. Research on educational resilience must be contextually sensitive. The model should specify underlying mechanisms that promote resilience rather than identify a list of personal attributes of resilient children. A plurality of research methods can be used to study the phenomenon. Results from longitudinal, multivariate studies, as well as the personal reflections of the children being followed, can be used to triangulate the resilience construct.

To date, few researchers have studied educational risk and protective factors among children in adverse circumstances. A better understanding of the lives and educational potential of children who are considered at risk of failing academically or leaving school ill-prepared for work or future learning can be partially accomplished by studying educationally resilient children, resilient schools,

and communities that foster healthy behavior.

To investigate educational resilience, the educational contexts in which children and their families are immersed should be analyzed. These contexts can be altered in the service of children's educational pursuits. Three pervasive and powerful environments that influence children are the family, the school, and the community. Each of these can be characterized in terms of the adversities that impinge on, and the protective factors that safeguard, children and their families. The mix of environmental features, in combination with individual children's vulnerability to particular stressors, determines the impact of environmental adversities on children's educational accomplishments. In this paper, adversity is defined as the potentiality of educational difficulties among children who are already at risk of educational failure. Protective factors are defined as attributes of individuals or features of the environment that reduce exposure to adversity or minimize the effects of exposure. These educational definitions are based on Garmezy and Masten's (1991) more general psychological definitions.

Table 1 presents an ecological framework that can guide research on promoting educational resilience within the contexts of the family, the school, and the community. The table identifies the adversities and protective factors that have import for educational resilience and describes the types of indicators and variables that are needed to verify the effectiveness of interventions.

Insert Table 1 about here

Promoting Educational Resilience: A New Direction in Educational Research

Research on educational resilience can be divided into three categories that deal with the roles of families, schools, and communities. The sections below describe research on protective factors in each.

The Role of the Family

Caregiving appears central in the development of resilience. In examining the impact of the environment on resilience, the role of the family is therefore a logical starting place. Parents and families provide the first protective agents in the child's environment. Masten et al. (1991) noted that parents

... nurture mastery motivation and self-esteem as well as physical growth. Parents provide information, learning opportunities, behavioral models, and connections to other resources. When these transactional protective processes are absent or are severely limited for prolonged

periods, a child may be significantly handicapped in subsequent adaptation by low self-esteem, inadequate information or social know-how, a disinclination to learn or interact with the world, and a distrust of people as resources (p. 438).

Studies of at-risk families seek to identify barriers that impede the development of children and features of the caregiving environment that foster educational resilience.

Fostering educational resilience in children requires families that are caring and structured; that hold high academic, moral, and social expectations for children's behavior; and that encourage participation in the life of the family. Most resilient children appear to have at least one strong, enduring relationship with an adult (not always a parent), which diminishes risks of severe family discord. Receiving care and affection is critical throughout childhood and adolescence, but particularly during the first year of life (Rutter, 1979b; Werner & Smith, 1982).

Rutter (1990) documented the importance of good parent-child relationships in a review of data from short-term prospective studies, intergenerational studies of high-risk populations, and studies involving retrospective adult recall. These studies suggest that secure childhood attachments protect against adversity in later life. Positive, intimate relationships correlate with self-concept and can enhance the individual's sense of worth within the society. In their review of studies of competence under stress, Masten et al. (1991) provided evidence that children whose families had a history of marital instability and frequent moves were more often rated as disruptive by peers and teachers.

A topic of research that has received more attention recently is the impact of mobility on children's lives, especially at-risk children. Recent statistics provided by the U.S. Department of Commerce (1987) showed that 19% of the nation's school-aged children move in a single year. Lash and Kirkpatrick (1994) report that some of these moves are the result of seasonal jobs (e.g., migrant farm workers), others reflect job or military transfers, and some are due to divorce and financial adversity. More than 50% of the children in urban schools may transfer during an academic year. Migration has been shown to be a serious and pervasive risk factor for student learning among poor and minority children, as revealed by two large national surveys (Long, 1975; Straits, 1987). Moving often keeps children of lower SES from attaining their normally expected achievement and grade level. The effect is particularly large when children move from a community of lower SES to one of higher SES. This type of move often results in grade retardation of lower SES children, although it does not appear to affect middle SES children. Early grade retardation is important because it forecasts further retardation, poor achievement, and dropping out—a phenomenon known as the "Matthew effect" (Walberg, 1984; Wang, 1990).

Adolescents, nonetheless, face some of the most acute difficulties: crime, delinquency, substance abuse, and teenage pregnancy. Garmezy (1985) showed the importance of several family-related variables in protecting children against such adversities. These variables included family cohesion, family warmth, and an absence of discord. In addition to holding high expectations of children (i.e., that they will succeed in school and become good citizens in their community), families that are structured and employ consistent discipline, rules, and regulations produce better outcomes among children from at-risk families (Bennett, Wolin, & Reiss, 1988). Masten, Morison, Pelligrini, and Tellegen (1990) related poor household maintenance and housekeeping to disruptiveness in school. The intervention literature suggests that these problems cannot be addressed without the direct involvement of the family (Liddle, 1991).

Research suggests the importance of encouraging children's participation in family and household activities. Werner and Smith (1982) emphasized the value of assigned chores, caring for brothers and sisters, and the contribution of part-time work in supporting the family. These behaviors help establish that children can truly contribute and improve their circumstances. Helping behaviors on the part of children enhance their self-esteem and ultimately foster resilience.

Family involvement with schools. Family involvement enhances children's school performance (Chan, 1987; Epstein, 1984; Moles, 1982). The active participation of family members in students' learning has improved student achievement; increased school attendance; and decreased student dropout rates, delinquency, and pregnancy rates (Peterson, 1989).

A series of research syntheses reported by Graue, Weinstein, and Walberg (1983) and Iverson and Walberg (1982) provided evidence that school-based family involvement programs work and that there is a significant correlation between school achievement and features of the home environment. Furthermore, parents who participate in family involvement programs were found to feel better about themselves and to be more likely to enroll in courses that advance their own education (Flaxman & Inger, 1991).

Educational intervention programs designed to involve family members are also significantly more effective than programs aimed exclusively at students (Walberg, 1984; Weikart, Epstein, Schweinhart, & Bond, 1978). A research study on parental involvement was conducted by Comer (1986) in a low-performing school using strategies for parental involvement over several years; the school, populated by at-risk students, improved its rank from 32nd to 3rd place. Similar results have been attained with other low-performing schools. Comer attributes these results to management teams involving parents, parent-developed workshops, parental involvement in tutoring programs for

children, and parents' assisting teachers in classroom activities.

Epstein (1987) developed a theory of family-school connections after recognizing four important microsystems that impact the development of children, families, peer groups, schools, and neighborhoods/communities. The degree of overlap among these microsystems represents the extent to which they share values, goals, and understandings of the social and cultural processes governing everyday life. The greater the overlap among domains, the more common their cultures and structures and their effects on children. It appears that when the home, school, peers, and the larger community are coordinated, their impact is greater.

Several types of family involvement programs are being implemented by schools across the country. Some of these programs help parents become better home educators and stress behaviors such as monitoring their children's homework, providing academic assistance or tutoring, and reducing television time. These programs train family members in communication skills and help their children to develop good study habits and high expectations. Empirical results from these interventions suggest that parent involvement in specific learning strategies has a strong and positive effect on children's academic performance (Lee, Bryk, & Smith, 1993). Other programs involve families directly in school management and choice and encourage parents' actual presence in the school (Bast & Walberg, 1994; Henderson, 1988; Lee et al., 1993). Still others provide resources and support. These programs provide a host of direct services to families and children. They may involve home visits, job training, career counseling, health care, mental health, and social support services (Center for the Future of Children, 1993).

The Role of Schools

Research on resilience, in general, and on identifying ways to foster educational resilience, in particular, has generated new approaches to studying and designing effective schools, particularly those in inner-city communities plagued with a multitude of risk factors. This new research focuses on not only identifying causes of risk and adversity, but also understanding the protective mechanisms that reduce risk and enhance success of all students (Wang & Gordon, 1994; Wang et al., 1994). (See Table 1.)

Much of the current research focuses on the influence of ethnicity and SES on the learning and school achievement of students in at-risk circumstances, as well as the ways at-risk populations differ from the mainstream. Lee, Winfield, and Wilson (1991), for example, found family characteristics to be an important differentiating factor between low- and high-achieving African-American students. Using the National Assessment of Educational Progress (NAEP) data (U.S.

Department of Education, 1991), they found that higher achieving African-American students tend to come from higher social classes and that a higher proportion of these students have working mothers. In addition, these students are twice as likely as their low-achieving counterparts to attend Catholic schools and are more likely to come from urban areas.

Maughan (1988) used a multilevel, fixed-effects research design in a three-year study of school experience and psychosocial risk in 50 multiethnic junior high schools. The findings demonstrate that schools that were successful with socially and economically disadvantaged students enjoyed strong leadership, faculty input on decision making, esprit de corps among staff, and strong parental involvement. Effective schools were described as having physically and emotionally pleasant surroundings. Classrooms were well managed, and instruction was stimulating. Children had a voice in choosing the kinds of instructional activities and classes in which they participated. These successful schools functioned effectively for both boys and girls, as well as across ethnic groups and social classes.

Similar findings were noted in a study by Peng, Weishew, and Wang (1991). Using the NELS:88 data (U.S. Department of Education, 1988), they identified inner-city schools that had high achievement scores despite their disadvantaged circumstances. These schools were found to be more orderly and structured than the low-achieving inner-city schools. Parents of students from the resilient schools held higher educational expectations for their children.

Research and practical wisdom suggests that when competently implemented, effective strategies can shield children from the adversity that abounds in inner-city environments. Rutter (1979a) showed that a school ethos of high expectations can protect students against adversities. He also found that rates of disruptive behavior were related to the ethos of the schools. Thus, children living under conditions that are not supportive of psychosocial well-being may experience their school as a force for good or bad.

The intimate and informed relations among students, their peers and families, and educators in private, especially parochial, schools (Coleman & Hoffer, 1987), smaller schools (Fowler & Walberg, 1991), and schools of choice may explain their appeal and possible achievement advantages (Boyd & Walberg, 1990). Bryk and Driscoll (1988) documented a strong association among teacher variables, such as satisfaction, morale, and absenteeism; student variables, including absenteeism, cutting classes, and dropping out; and a school's sense of community. Increasingly, educators are examining the role of "communitarian" values in the organization, practices, and policies of schools, especially those serving students in adverse circumstances. Noddings (1984) has built a philosophical argument,

supplemented by examples, on the role of caring in educational contexts. She asserts:

Further, there are ways to extend contact so that deeper relationships may develop. If I know how my student typically reacts to certain topics and tasks, I am in a better position to guide him both sensitively and economically. Why can we not opt for smaller schools, for teachers and students working together for three years rather than one, for teachers teaching more than one subject? We are limited in our thinking by far too great a deference to what is, and what is today is not very attractive. Our alternative is to change the structure of schools and teaching so that caring can flourish, and the hope is that by doing this we may attain both a higher level of cognitive achievement and a more caring, ethical society. (p. 180)

Some research suggests that reducing excessively bureaucratic and impersonal social relations in schools serving students at risk of school failure may reduce students' and teachers' sense of alienation and disengagement (Bryk & Driscoll, 1988). Further research is needed on the value of a schoolwide orientation that focuses on caring and commitment and their relationship to educational resilience.

Although schools make significant efforts to compensate for poor academic potential, many at-risk students still experience serious difficulties in achieving learning success. They need better help than they are now receiving. The prototypical remedial or compensatory education program often contributes to children's learning problems (Baker, Wang, & Walberg, 1994/1995). As noted by Wang, Reynolds, and Walberg (1988), at-risk students may actually receive inferior instruction when schools provide them with specially designed pull-out programs to meet their greater-than-usual learning needs. There is a tendency to neglect fundamental content in these special programs and to provide less instruction in higher order, advanced skills. Students with special needs, for example, are most likely pulled out of the regular reading classroom to be drilled in vocabulary, whereas advantaged students are exposed to reading instruction that emphasizes comprehension and related higher order thought processes.

Similar experiences occur in mathematics instruction for low-achieving students and those considered to be at risk of failing or dropping out of school. Comprehension, problem solving, and higher order reasoning are less often emphasized in the instruction of these children. Classroom observational studies document that these students experience less instruction on higher order skills than their advantaged counterparts (Means & Knapp, 1991). Furthermore, teachers tend to underestimate what students with special needs or those considered at risk can do. They tend to delay the introduction of more challenging work and to not provide students with a motivating context for learning (Knapp & Turnbull, 1990).

The role of teachers. The importance of external support systems as protective mechanisms

has been stressed in the literature on childhood resilience. Teachers can play an important role in promoting educational resilience by reducing stress and providing the positive supports needed by children in adverse conditions. The contribution of teachers has been documented among the children of Kauai in Hawaii who took part in Werner's (1989) longitudinal study of the long-term effects of prenatal and perinatal stress. Of the 142 high-risk children identified in her study, 72 beat the odds and became competent, successful adults. Describing these resilient children as easygoing and even tempered, teachers praised the students' problem-solving abilities and competence in reading. The school became a home away from home for the children; it was a refuge from a chaotic home life. Favorite teachers became role models in whom the children confided when their own families were threatened by dissolution.

The value of teachers providing support is also cited by Benard (1991). In her monograph, she quotes Noddings (1988):

At a time when the traditional structures of caring have deteriorated, schools must become places where teachers and students live together, talk with each other, take delight in each other's company. . . . [W]hen schools focus on what really matters in life, the cognitive ends we now pursue so painfully and artificially will be achieved somewhat more naturally. . . . It is obvious that children will work harder and do things--even odd things like adding fractions--for people they love and trust. (p. 10)

In their study of public and private high schools, Coleman and Hoffer (1987) point to the role of caring teachers in helping high school students develop the values and attitudes necessary for persevering in their schoolwork and achieving high grades. They stress the importance of the personal relationships among teachers and students--sustained, intimate relationships that support students' academic and social endeavors.

In addition to providing supportive instruction, effective teachers serve to foster educational resilience by finding ways to promote students' self-concept and the responsibility for active learning (Wang & Peverly, 1986; Wang & Palincsar, 1989). As Bandura (1993) explicated in his cognitive theory, belief in one's efficacy is best promoted through mastery of new experiences. When students become convinced they are instrumental in their learning success, they work harder to overcome difficulties.

Students develop information about their own efficacy from several sources, including memories of similar experiences; the observation of others mastering tasks; an awareness of their own level of motivation and interest in a task; and persuasion and exhortation by others (Winne, 1991). These sources help students develop expectations for their own success. Teachers can foster educational resilience by providing students with opportunities to set realistic expectations and by

helping them to master new experiences.

The role of curriculum and instruction. A major risk factor encountered by students in inner-city schools is the disconnection between schooling experiences and family life (Fordham & Ogbu, 1986; Scheinfeld, 1983; Taylor, 1994). Some of the most critical facilitating factors ameliorating this problem of disconnection are teachers' sensitivity to student diversity and their ability to provide learning experiences that are responsive to cultural and individual differences. Effective teachers reduce vulnerability and stress by using a variety of instructional strategies and adapting course content to ensure the personal and academic competence of their students (Benard, 1991).

Campione and Armbruster (1985) point out that children with excellent comprehension skills usually relate new information to their personal experiences. Differences in prior knowledge, which may be the product of cultural differences, may be important sources of variation in students' learning strategies and outcomes. Students from culturally diverse backgrounds may not only have difficulty accessing background knowledge, but also have knowledge deficits. They may not be able to access prerequisite prior knowledge without help from teachers. This lack of background knowledge is sometimes remediated by using culturally relevant texts and materials or teaching prerequisite knowledge. Palincsar and Klenk (1991) recommend that teachers use universal themes with which all students can identify as a method to make new content more accessible. Teachers who are familiar with the types of background experiences students bring to the classroom not only select materials that are culturally relevant, but also make it easier for the students to relate to their classroom experience and to access prior knowledge.

Teachers who are effective in responding to student diversity also acknowledge the importance of individual difference variables in their planning and interactions with students. They use a variety of strategies in creating classroom learning environments that maximize each student's opportunities for learning success (Corno & Snow, 1986; Wang, 1990; Wang & Walberg, 1985). Below is a list of some of the methods identified by Corno and Snow (1986) that teachers use to adapt instruction to student differences to ensure the learning success of every child.

- Manipulate classroom organizational structures, such as the use of short-term, nonstigmatizing groups, learning centers, and reward structures.
- Vary the use of methods that present new information and support problem solving, including the amount of time spent on reviewing previously learned materials; the number of examples used to provide further explanation and illustration; and the use of summaries, points of emphasis, and modeling.
- Vary the types of support used, including aides, peer tutoring, a variety of media, and other

methods.

- Vary the amount of instructional support and available time for learning to accommodate the needs of the individual student.
- Vary the level, form, and number of questions asked. Ask more higher order questions so that students go beyond the material presented.
- Vary the nature and amount of reinforcement given for correct answers, as well as the level of information provided when a student gives an incorrect answer.
- Enhance the students' use of inquiry processes by implementing "inductive teaching" strategies.
- Vary the ways information is presented during instruction to prompt students to give their own examples of new principles or content learned.
- Facilitate students' use of self-regulating techniques, such as self-monitoring or self-reinforcement by providing a variety of problem-solving opportunities in the instruction-learning process.

The role of instructional mediation has been identified as an important resource for students, particularly those from diverse cultural backgrounds and those requiring greater-than-usual instructional support. The learning of complex material requires both cognitive processing of new information and metacognitive activity. If instruction can bear more of the information-processing burden, a student's general intellectual abilities are less critical. When little instructional mediation is used, students must discover principles and concepts themselves. As more instructional mediation is introduced, students have an opportunity to learn new principles, concepts, and cognitive skills. For example, instructional mediation might involve teachers' modeling problem-solving approaches. In this case, the teacher provides a model of expert performance, giving novice learners an opportunity to see how new problems are solved. Examples of teachers' modeling thinking strategies include teachers' thinking aloud as they read a text, talking aloud as they solve a mathematics problem, and allowing students to watch them plan and revise an essay (Means & Knapp, 1991).

The role of peer support. Since Coleman's (1961) work on *The Adolescent Society*, researchers have recognized the role of peer influences on a range of adolescent outcomes. Coleman (1961), Csikszentmihalyi and Larson (1984), and Ogbu (1988) have documented that peer cultures can be at odds with the academic values of schools. The academic achievement of students in at-risk circumstances is the product not only of a child's intellectual ability, but also of a school's climate, family values and practices, and the social support networks available from peers. Clark (1991) found

that, after the family, peers are the most important source of support. Social support networks from peers provide children and adolescents with a sense of being valued, cared for, and loved. These peer networks can facilitate the development of an individual and protect against stress by providing a stable and supportive source of concern; conversely, they can inhibit positive educational outcomes by pressuring children and youth to engage in misconduct rather than productive educational tasks.

Anderson (1990) described the impact of peers on African-American male youth who were moving between two communities—one low SES and the other evolving into a middle class community through a process of gentrification. The research showed that adolescents appropriated the language, attitudes, and behaviors of the prevalent youth culture in each community. In the more economically disadvantaged community, students displayed the more defensive physical postures and speech patterns that were characteristic of the youth in the community. In the gentrified community, the same youth exhibited more helpful acts in an effort to dispel perceptions of them as engaging in uncivil or criminal activities. The results indicate that youth are exceedingly sensitive to the social environment in which they exist and to the attitudes, aspirations, and behaviors of their peers.

Coleman and Hoffer (1987) describe how students in boarding schools are supportive of their friends when their families disengage. Another support for the influence of peers is the finding that use of cooperative learning strategies is the single most effective school-based intervention for reducing alcohol and drug use (Bangert-Downs, 1988). Similarly, Watt, Moorehead-Slaughter, Japzon, and Keller (1990) provide evidence that children of divorced parents find respite from a stressful home situation through an external social network that allows them to distance themselves from stressed parents. The school performance of children of divorce is affected by their peer social network more than the school performance of children from intact homes. Children of divorce find companionship and care from school friends to a greater degree than children from intact homes.

Peers can also have a significant impact on a student's self-perceived academic competence and attitude toward school. Cauce (1986) found that the peer group's attitude toward school was a significant predictor of grades, achievement test scores, value placed on being a good student, and perceived competence. Patchen (1982) also found that students with peers who valued high achievement spent more time on homework; finished more of their homework assignments; attended school more regularly; and were tardy, absent, or missed class without permission less often.

Opportunities to interact with students who have high achievement motivation, positive attitudes toward school, and a positive academic self-concept can be beneficial to at-risk students. Mentoring programs, cooperative learning programs, cross-age tutoring, use of small learning groups,

and extracurricular activities provide mechanisms for children and youth to develop positive peer relationships and stronger support networks (Reynolds, 1982; U.S. Department of Education, 1986; van de Grift, 1990; Wang et al., 1994; Williams et al., 1986).

The Role of Communities

One of the clearest signs of a caring and supporting community is the presence of social organizations that provide for healthy human development (Garmezy, 1991). Health care organizations, child care services, job training opportunities, religious institutions, and recreational facilities are some of the social organizations that serve human needs. Communities with well-developed and integrated networks of social organizations have fewer social problems (Miller & Ohlin, 1985).

Benard's (1991) review identified protective factors operating within communities. She stressed the availability of community resources as a factor. She also emphasized the expression of consistent social and cultural norms so that students understand what constitutes desirable behavior and suggested that opportunities must be available for children and youth to participate as valued members of the community. A similar conclusion was reached by Hill, Wise, and Shapiro (1989), who argued that failing urban school systems can be revitalized only when the entire community unites in a decisive effort to improve.

Communities with high expectations for good citizenship provide protective mechanisms for residents; this is seen most clearly in studies that explore the importance of cultural norms on student alcohol and drug abuse (Bell, 1987; Long & Vaillant, 1989). In this regard, Nettles (1991) analyzed the effectiveness of community-based substance abuse programs available to African-American youth. She found that school-based clinics are only partially effective in reducing risk. The programs that fostered resilience provided more social support and adult aid, gave concrete help on tasks, and provided opportunities for students to develop new interests and skills.

Masten and associates (1990) identified abstract beliefs in religious protective figures and concrete relationships with members of the religious community as protective factors. Religious beliefs have provided standards and expectations that have been historically helpful as guides to good conduct for all ethnic groups and social classes. Coleman and Hoffer (1987) describe the importance of functional and value communities in terms of their impact on urban high school effectiveness. Based on results from their study, the idea of "social capital" was proposed, and the role of the school and broader community can provide some substitution for the absence of social capital in families.

Urban communities, however, often lack a well-integrated network of social organizations for children and youth. The services provided by these organizations are often compartmentalized and fragmented (Boyd & Crowson, 1993; Lugg & Boyd, 1993; Wang, Haertel & Walberg, in press). In their analysis of the impact of social policies on the quality of human resources available to African-American youth, Swanson and Spencer (1991) emphasized the dual importance of finding ways to reduce risk and making opportunities and resources available in order to break the negative chain reactions associated with adversity. Because schools have the most sustained contact with children and their families, several authorities hold that educators should take the potential benefits of coordinating and integrating children's services across school and community organizations into consideration when designing their school improvement programs (Holtzman, 1991; Kirst & McLaughlin, 1990; National Center on Education in the Inner Cities, 1990).

Conclusions and Future Directions

The meaning of the term *educational resilience* offers a provocative challenge to educational researchers and practitioners. In a single word, it can suggest several useful notions and priorities. For educators, the term suggests the potential benefits of early experience; the need to mitigate adverse circumstances; and the importance of educationally facilitative and alterable protective factors in communities, homes, peer groups, schools, and classrooms. For educational researchers, it offers the intriguing hypothesis that early alterable (possibly sustained) conditions fortify students to persist successfully through endemic difficulties.

Following two decades of resilience studies by psychiatrists and clinical and developmental psychologists, new research is beginning to emerge. It may lead to a better understanding of student diversity by studying children who perform at the margins of achievement. As noted in the present paper, new research has begun on the role of communities in fostering competence and resilience. These studies point to the many factors—economic, political, and sociological—that influence educational and other life outcomes. Attention is also being paid to the ways to coordinate school and community services in order to provide a more integrated network of resources and protective mechanisms to children and their families.

Considerable research on learning in homes, peer groups, schools, and communities is consonant with the construct of resilience advanced in psychological studies. This research suggests that conditions and methods which increase learning and other educational outcomes may also promote other developmental accomplishments. In view of pressing educational and social problems,

particularly for at-risk students, educators may now wish to experiment with programs that incorporate such conditions and methods. Some programs may call for reorganization and unusual coordination, but none would appear to be harmful or necessarily disruptive.

Still, some caveats seem in order. Even though some initial educational research has yielded promising results, much of the argument relies on analogy or hypothesis rather than empirical confirmation. Moreover, the needed research may be formidable since it would involve multiple institutions and require multidimensional measures. Finally, it would seem imperative that researchers probe the validity of the construct over extended periods of time for, by definition, educational resilience implies longitudinal studies over extended time periods.

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Table 1

An Ecological Framework to Guide Research on Educational Resilience

Contexts	Adversities	Protective Factors that Mitigate Against School Failure	Resilience-Promoting Indicators
Home Environment	Malnutrition Poverty Toxic Environment Unemployment Chronic physical and mental illness Divorce/family dissolution Limited parental education Frequent moves Perinatal stress Unsafe and unhealthy neighborhoods Child maltreatment (severe neglect, abuse) Limited transportation Little or no health care Poor parenting skills Poor communication skills	Stable and organized family environment At least one strong relationship with adult (not always parent) Absence of discord Family warmth Family cohesion Children perform chores to help family Family nurtures physical growth Family provides information Family provides learning opportunities Family provides behavioral models Family provides connections to other resources Family nurtures self-esteem, self-efficacy Family nurtures mastery motivation Family holds high academic expectations for children's behavior Family involvement in programs and courses that advance their skills	Family background: income; maternal and parental occupations; presence of physical/mental illness; presence of father in home; degree of parental education Student: achievement; school satisfaction; self-efficacy; academic self-concept Family: participation in school and community programs; quality of family relationships; opportunities at home for children to learn; family members support for children's education; organized home environment
School Environment	Academic underachievement Low expectations for student achievement Few resources Large numbers of low SES/minority students Inadequate teaching staff Poor leadership Unsafe school Poor instructional quality Use of pull-out programs and negative labeling of children with special needs Curricula that is watered down with little higher-level content presented Too little time devoted to instruction Large class size	Safe and secure school and neighborhood Leadership demands for achievement Positive efforts by teachers and staff Positive peer group influence Structured, positive school environment Facilitate normative and unexpected transitions among schools Provide meals for children in need Provide health clinics in school Provision of higher-order curriculum context, not just basic skills Presence of active family-involvement program Presence of active community-involvement program Teacher sensitivity to diverse student ethnic and cultural backgrounds Provide access to tutors, teachers, and other significant adults who can mentor students Teaching self-regulated learning techniques Use of adaptive learning techniques Use of cooperative learning strategies Promotion of self-efficacy through mastery of new experiences	Demographic: school size; % AFDC families; attendance rate; racial/ethnic mix; % free breakfast and lunch; dropout rate Student: achievement; school satisfaction; self-efficacy; academic self-concept; number of health and mental health services provided; Classroom: quality and quantity of teacher-student interactions; number of higher-order questions initiated by teacher vs. lower-order questions; participation in extra-curricular activities; amount of interaction with teachers; tutors and other school-related adults; classroom climate (i.e., cohesiveness, competitiveness, cooperativeness); quantity of time devoted to instruction; % of time on higher learning; % of time on basic and remedial skills; use of student background in selecting materials and activities; use of goal-setting and other strategies for self-regulated learning; use of techniques and practices to build self-esteem; use of adaptive learning techniques use of direct instruction; use of cooperative learning techniques

Table 1

An Ecological Framework to Guide Research on Educational Resilience (cont'd)

Contexts	Adversities	Protective Factors that Mitigate Against School Failure	Resilience-Promoting Indicators
School Environment (cont'd)		Ample and diverse motivational materials that represent student interests and background District-wide efforts to improve quality of schooling available	School: safe school environment; strong instructional leadership by principal; school-wide culture emphasizing achievements; variety of student clubs and extra-curricular activities; active parent involvement program; active community involvement program; provision of health, mental health, and other services to students; programs to facilitate transitions between school and grades Teacher: attitudes and beliefs about all students' ability to learn; teacher knowledge about subject matter; teacher pedagogical knowledge; teacher knowledge about students' background and culture; teacher years of experience; opportunities for teacher inservice
Community Environment	High crime rate Unemployment Substance abuse Teenage pregnancy Few community Services Fragmented community services Barriers to services (language, eligibility, cost, transportation) Unsafe neighborhood	Available social services Low neighborhood delinquency rates Improved public safety in dangerous neighborhoods Integrated services School-based community services Availability of religious community Expressed norms of desirable behaviors Opportunities for children and youth to participate in meaningful community activities	Demographic: community crime rate; unemployment rate; number of substance abusers; number of teenage pregnancies; delinquency rates Available services: number and types of services provided; number of children, youth, and families served; degree of service integration (i.e., school-linked services); accessibility (relaxed eligibility criteria); availability of translators; use of vans to transport clients to services Opportunities for support and involvement: availability of programs that mentor children and youth; opportunities for apprenticeships and job training; number of church-based activities available Expressed community norms: evidence of rules and regulations expressing norms; degree of consensus among community members about expressed norms; multiple settings and opportunities for student exposure to norms; evidence of community programs that provide incentives and rewards for school achievement; good behavior, and accomplishment

THE NATIONAL CENTER ON EDUCATION IN THE INNER CITIES

The National Center on Education in the Inner Cities (CEIC) was established on November 1, 1990 by the Temple University Center for Research in Human Development and Education (CRHDE) in collaboration with the University of Illinois at Chicago and the University of Houston. CEIC is guided by a mission to conduct a program of research and development that seeks to improve the capacity for education in the inner cities.

A major premise of the work of CEIC is that the challenges facing today's children, youth, and families stem from a variety of political and health pressures; their solutions are by nature complex and require long-term programs of study that apply knowledge and expertise from many disciplines and professions. While not forgetting for a moment the risks, complexity, and history of the urban plight, CEIC aims to build on the resilience and "positives" of inner-city life in a program of research and development that takes bold steps to address the question, "What conditions are required to cause massive improvements in the learning and achievement of children and youth in this nation's inner cities?" This question provides the framework for the intersection of various CEIC projects/studies into a coherent program of research and development.

Grounded in theory, research, and practical know-how, the interdisciplinary teams of CEIC researchers engage in studies of exemplary practices as well as primary research that includes longitudinal studies and field-based experiments. CEIC is organized into four programs: three research and development programs and a program for dissemination and utilization. The first research and development program focuses on the *family* as an agent in the education process; the second concentrates on the *school* and factors that foster student resilience and learning success; the third addresses the *community* and its relevance to improving educational outcomes in inner cities. The focus of the *dissemination and utilization* program is not only to ensure that CEIC's findings are known, but also to create a crucible in which the Center's work is shaped by feedback from the field to maximize its usefulness in promoting the educational success of inner-city children, youth, and families.

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